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## REMARKS

Claims 1 through 14 were rejected under 35 USC 112, second paragraph, as being indefinite, and under 35 USC 103(a) as being obvious in light of the teachings in Jordan et al and Duret et al.

### REJECTION UNDER 35 USC 112.

The Applicant respectfully disagrees with the Examiner's position that Claims 13 and 14 are indefinite.

Claims 13 states:

The pattern of a dental prosthesis made from a wax material in accordance with the method of Claim 7.

Claim 7 states:

A method of manufacturing a pattern of a dental prosthesis from a wax material, comprising the steps of

(a) forming a model of a patient's dentition including surfaces corresponding to the dental structure nearby the location that the dental prosthesis is to be placed in the mouth of a patient,

(b) creating three dimensional digital data corresponding to the said surfaces, and based on said data corresponding to the said surfaces, creating three dimensional digital data substantially corresponding to the dental prosthesis to be manufactured,

(c) transmitting said three dimensional digital data of said dental prosthesis to be manufactured to automated prototyping equipment, and

(d) using the automated prototyping equipment making from a wax material the pattern of said dental prosthesis to be manufactured based upon said three dimensional digital data of said dental prosthesis.

Claims 14 states:

The dental prosthesis made in accordance with the method of Claim 10.

Claims 10 states:

A method of manufacturing a dental prosthesis, comprising the steps of

(a) forming a model of a patient's bite registration including surfaces corresponding to the dental structure nearby the location that the dental prosthesis is to be placed in the mouth of a patient,

(b) creating three dimensional digital data corresponding to the said surfaces, and based on said data corresponding to the said surfaces, creating three dimensional digital data substantially corresponding to the dental prosthesis to be manufactured,

(c) transmitting said three dimensional digital data of said dental prosthesis to be manufactured to automated prototyping equipment,

(d) using the automated prototyping equipment making from a wax material the pattern of said dental prosthesis to be manufactured based upon said three dimensional digital data of said dental prosthesis, and

(e) using said pattern in the loss wax investment casting process manufacturing said dental prosthesis.

Claim 13 is simply claiming the wax pattern of a dental prosthesis made by the manufacturing method stated in Claim 7. Claim 14 is simply claiming the dental prosthesis made by the manufacturing method stated in Claim 10. Thus the wax pattern and dental prosthesis are being

defined in terms of the process by which they are made. This is permissible under the standard set forth in 35 USC 112, second paragraph, and therefore the Examiner's objection should be withdrawn.

#### REJECTION UNDER 35 USC 103

##### Hindsight Approach

Applicant objects to the hindsight approach adopted by the Examiner in rejecting the Claims 1 through 14 under 35 USC 103(a). It is well settled law that such an approach is strictly prohibited. After considering Applicant's disclosure, the Examiner has selected two prior art references showing some individual features that are similar to certain elements of Applicant's invention. There is nothing in these references, however, suggesting Applicant's invention, or combining references as the Examiner has done.

The correct way to resolve the question of obviousness is to follow the approach set forth in Graham v. John Deere, 383 US 1, 17, 148 USPQ 459, 467 (1966). In this case, the U. S. Supreme Court directed that three factual inquiries be made. These factual inquiries are:

1. Determining the scope and content of the prior art.
2. Ascertaining the difference between the prior art and the claims at issue.
3. Resolving the level of skill in the pertinent art.

The Court of Appeals for the Federal Circuit in In re Fritch, 23 USPQ 2d 1780, deals specifically with obvious determinations. In Fritch, the Court on page 1783 states:

**"The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification."**

As provided in M.P.E.P. Section 2143, before a *prima facie* case of obviousness under 35 USC 103 can be established, the following criteria must be met:

- 1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine the reference teachings;
- 2) There must be a reasonable expectation of success; and
- 3) The prior art references must teach or suggest all the claim limitations.

Applicant believes that the substantial evidence requirement established by In re Kotzab, 217 F. 3d 1365 (Fed. Cir. 2000), is lacking. In re Kotzab states:

A claimed invention is unpatentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. See 35 U.S.C. § 103(a) (Supp. III 1997); In re Dembiczak, 175 F.3d 994, 998, 50 USPQ2d 1614, 1616 (Fed. Cir. 1999). The ultimate determination of whether an invention would have been obvious under 35 U.S.C. § 103(a) is a legal conclusion based on

underlying findings of fact. See Dembiczak, 175 F.3d at 998, 50 USPQ2d at 1616. We review the Board's ultimate determination of obviousness de novo. See id. However, we review the Board's underlying factual findings for substantial evidence. See In re Gartside, 203 F.3d 1305, 1316, 53 USPQ2d 1769, 1776 (Fed. Cir. 2000).

The evidence is that neither Jordan et al nor Duret et al are concerned with making a wax pattern of the dental prosthesis and then from the wax pattern making the dental prosthesis.

In re Kotzab further states:

A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher." Id. (quoting W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983).

Most if not all inventions arise from a combination of old elements. See In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). Thus, every element of a claimed invention may often be found in the prior art. See id. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. See id. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant. See In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. See B.F. Goodrich Co. v. Aircraft Breaking Sys. Corp., 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996).

#### Scope and Content of Prior Art:

The prior art, Jordan et al and Duret et al, only shows features of Applicant's invention, but do not in any way suggest the combination of steps as taught and claimed by Applicants. The Jordan et al dental prosthesis manufacturing process scans a model of the patient's teeth to

create a virtual image for determining dental articulation. Duret et al disclose making a dental prosthesis directly from data in a computer used to control a milling machine that forms the prosthesis.

Differences between Prior Art and Claims:

Neither Jordan et al nor Duret et al suggest using a wax pattern. Thus, the principal difference between the references relied upon and Applicant's invention is using automated prototyping equipment to make from a wax material the pattern of the dental prosthesis to be manufactured based upon three dimensional digital data substantially corresponding to said image of said dental prosthesis to be manufactured. Such a wax pattern has marginal edges that are at least 3/4 of a millimeter from margins of an individual tooth structure to which the dental prosthesis is to be attached. These marginal edges of the wax pattern are manually adjusted to compensate for the specific configuration of the individual tooth structure by adding wax material to said edges. The prior art wishes to avoid such manual adjustment.

Using hindsight, the Examiner has improperly applied Jordan et al and Duret et al. Notwithstanding that there is nothing in any of these references which suggests the use of a wax pattern as claimed by Applicant, the Examiner concludes that Applicant's invention is obvious. This is clearly an erroneous application of the standard of 35 USC 103 contrary to the mandate of Graham v. John Deere.

Level of Skill in the Pertinent Art:

One way to ascertain the level of skill in the pertinent art is to examine the references cited. None of these references suggest making a wax pattern of the dental prosthesis as defined by Claims 1-14. This is indicative of the skill in the art to which Applicant's invention is related.

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In view of the above **Remarks**, the application is deemed to be in a condition for allowance and such action is solicited.

**TELEPHONE INTERVIEW**

If the Examiner believes that a telephone interview would advance the allowance of this application, Applicant's attorney requests the Examiner call to arrange a date and time for such interview after having an opportunity to review the above amendments and consider the above remarks.

**EXTENSION OF TIME**

A three month extension to reply to the last Office Action is requested as indicated below.

The six month deadline to reply to the Office Action of November 18, 2002, falls on a Sunday, and the next business day is May 19, 2003.



Applicant therefore mailed this reply on the last day to reply within the six month extended response period.

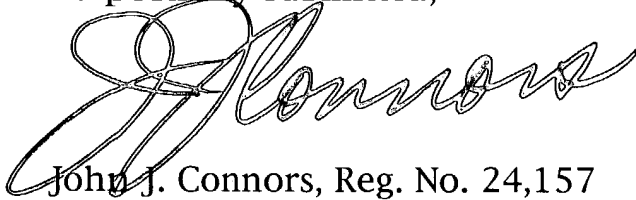
**EXTRA FEE**

Any additional fees should be charged to Applicant's attorney deposit account as indicated below.

**CUSTOMER NUMBER**

Please note Applicant's attorney Customer No. 021905, and confirm that this customer number has been entered in the U. S. Patent & Trademark Office records in connection with the above identified application.

Respectfully submitted,



John J. Connors, Reg. No. 24,157

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## CERTIFICATE OF MAILING

I hereby certify that this correspondence is being mailed with the United States Postal Service as First Class Mail, the correct postage paid, in an envelope addressed to: Honorable Commissioner of Patents, P. O. Box 1450, Alexandria, VA 22313-145020231, on May 19, 2003

By: 

## REQUEST FOR EXTENSION OF TIME

Applicant respectfully request an extension of time to reply to the last Office Action from November 18, 2002 to May 19, 2003. Enclosed is Check No. 805 in the amount of \$465 to cover the fee for this extension of time.

By: 

## AUTHORIZATION TO CHARGE/CREDIT DEPOSIT ACCOUNT

The commissioner is hereby authorized to charge payment of any additional fees associated with this communication or credit any overpayment to Deposit Account No. 03-2830.

By: 